

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A mobile communication system which comprises a mobile station (MS) and an interworking function (IWF) for establishing a high-speed point-to-point data connection to a data network access point (2), which supports a multilink point-to-point protocol PPP, said point-to-point connection comprising a first subleg between the mobile station (MS) and the interworking function (IWF) and a second multilink PPP subleg between the interworking function (IWF) and the access point (2), ~~characterized in that~~ wherein

the mobile station (MS) comprises multilink PPP protocol means (4, 6) for establishing at least two PPP links (PPP1, PPPn) with said access point (2) through said point-to-point connection,

said first subleg comprises at least two PPP subchannels for transferring each of said at least two PPP links (PPP1, PPPn) in a dedicated PPP subchannel, and

the interworking function (IWF) is ~~arranged~~ configured to adapt each PPP subchannel to the respective PPP link (PPP1, PPPn) on said multilink PPP connection so that the PPP links are transferred transparently between the multilink protocol means of the mobile station and the access point (2).

2. (Currently Amended) A mobile communication system according to claim 1, ~~characterized in that~~ wherein on said first subleg ~~there is~~ a physically separate traffic channel or traffic stream for each PPP link (PPP1, PPPn).

3. (Currently Amended) A mobile communication system according to claim 1, ~~characterized in that~~ further comprising a link access control (LAC) protocol, ~~such as a radio link protocol RLP, is used~~ on said first subleg or on one of its subsegments, and ~~that there is~~ a separate LAC link and a physically separate traffic channel or traffic stream for each PPP link (PPP1, PPPn) between the mobile station (MS) and the interworking function (IWF) or on said subsegment.

4. (Currently Amended) A mobile communication system according to claim 1, ~~characterized in that there is~~ further comprising one common broadband traffic channel for all PPP links (~~PPP1, PPPn~~) on said first subleg, and ~~that the mobile station (MS) and the interworking function (IWF) are arranged~~ being configured to multiplex the PPP links (~~PPP1, PPPn~~) into said broadband traffic channel.

5. (Currently Amended) A mobile communication system according to claim 1, ~~characterized in that there is~~ further comprising a separate LAC protocol link for each PPP link (~~PPP1, PPPn~~) and one common broadband traffic channel for all PPP links (~~PPP1, PPPn~~) on said first subleg or on one of its subsegments, and ~~that the mobile station (MS) and the interworking function (IWF) are arranged~~ configured to multiplex the PPP links (~~PPP1, PPPn~~) into said broadband traffic channel.

6. (Currently Amended) A mobile communication system according to claim 4, ~~characterized in that~~ wherein the mobile station (~~MS~~) and the interworking function (~~IWF~~) are ~~arranged~~ configured to multiplex the PPP links (~~PPP1, PPPn~~) into the frame structure of the broadband traffic channel.

7. (Currently Amended) A mobile communication system according to claim 6, ~~characterized in that~~ wherein each PPP link (~~PPP1, PPPn~~) has predetermined bit locations in the transmission frame of the broadband traffic channel.

8. (Currently Amended) A mobile communication system according to claim 6, ~~characterize in that~~ wherein the mobile station (~~MS~~) and the interworking function (~~IWF~~) or an intermediate network elements are ~~arranged~~ configured to multiplex the frames of each ~~separate~~ LAC protocol link into said broadband traffic channel.

9. (Currently Amended) A mobile communication system according to claim 1, ~~characterized in that~~ wherein there is one common LAC protocol link for all PPP links (~~PPP1, PPPn~~) on said first subleg or on one of its subsegments, and PPP subchannels ~~are~~ multiplexed inside the LAC protocol link.

10. (Currently Amended) A mobile communication system according to claim 9, ~~characterized in that~~ wherein each frame of the LAC protocol link contains information from each PPP link (~~PPP1, PPPn~~).

11. (Currently Amended) A mobile communication system according to claim 9, ~~characterized in that~~ wherein each frame of the LAC protocol link contains information from only one PPP link (~~PPP1, PPPn~~) and information on the PPP link to which the information is related.

12. (Currently Amended) A mobile communication system according to claim 9, ~~characterized in that there is~~ further comprising one common broadband traffic channel between the mobile station and the interworking function.

13. (Currently Amended) A mobile communication system according to claim 9, ~~characterized in that~~ wherein a traffic channel underlying said common LAC protocol link on said first subleg or on one of its subsegments consists of two or more sub-traffic channels.

14. (Currently Amended) A mobile communication system according to ~~claim 1~~ claim 4, ~~characterized in that~~ wherein said subsegment is located between the mobile station and a network element of ~~the~~ a radio access network, preferably a radio network controller.

15. (Currently Amended) A mobile station for a mobile communication system, the mobile station comprising means for establishing a high-speed point-to-point data connection to a data network access point (~~2~~), which supports a multilink point-to-point protocol PPP, said point-to-point connection comprising a first subleg and a second multilink PPP subleg and an interworking function (IWF) between the sublegs, ~~characterized in that~~ wherein the mobile station (~~MS~~) also further comprises

multilink PPP protocol means (~~4, 6~~) for establishing at least two PPP links (~~PPP1, PPPn~~) with said access point (~~2~~) through said point-to-point connection,

means (~~71, 73, 83, 91~~) for inserting said at least two PPP links (~~PPP1, PPPn~~) into two or more PPP subchannels whose number corresponds to that of the PPP links for transferring each PPP link in a dedicated PPP subchannel on said first subleg.

16. (Currently Amended) A mobile station according to claim 15, ~~characterized in that the mobile station (MS) comprises~~ further comprising means for establishing a physically separate traffic channel or traffic stream for each PPP subchannel on said first subleg.

17. (Currently Amended) A mobile station according to claim 15, ~~characterized in that further comprising~~ a link access control (LAC) protocol of the mobile communication network, ~~such as a radio link protocol RPL, is used~~ on said first subleg or on one of its subsegments, and ~~that the mobile station (MS) comprises means (71, 73) for~~ establishing a separate LAC link and a physically separate traffic channel or traffic stream for each PPP subchannel on said first subleg or on its subsegment.

18. (Currently Amended) A mobile station according to claim 15, ~~characterize in that the mobile station (MS) comprises~~ further comprising means (83) for the multiplexing PPP links into a common broadband traffic channel.

19 (Currently Amended) A mobile station according to claim 15, ~~characterized in that the mobile station (MS) comprises~~ further comprising means (81) for establishing a separate LAC protocol link for each PPP link (PPP1, PPPn) via one common broadband traffic channel and means (93) for multiplexing the PPP links into said broadband traffic channel.

20. (Currently Amended) A mobile station according to claim 15, ~~characterized in that the mobile station (MS) comprises~~ further comprising means (93) for establishing one common LAC protocol link for all PPP links (PPP1, PPPn) and means (91) for multiplexing the PPP subchannels inside the LAC protocol link.

21. (Currently Amended) An interworking function for a mobile communication network, the interworking function comprising means for establishing a high-speed point-to-point data connection between a data network access point (2), which supports a multilink point-to-point protocol PPP and a mobile station (MS), said point-to-point connection comprising a first subleg between the mobile station (MS) and the interworking function (IWF) and a second multilink PPP subleg between the interworking function (IWF) and the access point (2), ~~characterized in that the interworking function (IWF) comprises~~ comprising

means ~~(72, 74, 84, 92)~~ for inserting PPP links ~~(PPP1, PPPn)~~ of the second multilink PPP subleg into a corresponding number of PPP subchannels on said first subleg for transferring each PPP link in a dedicated PPP subchannel so that the PPP links are transferred transparently through the mobile communication network between the mobile station ~~(MS)~~ and the access point ~~(2)~~.

22. (Currently Amended) An interworking function according to claim 21, ~~characterized in that~~ further comprising a link access control (LAC) protocol of the mobile communication network, ~~such as a radio link protocol RLP, is used on said first subleg or on one of its subsegments, and that the interworking function (IWF) comprises means (72, 74)~~ for establishing a separate LAC link and a physically separate traffic channel or traffic stream for each PPP subchannel on said first subleg or on its subsegment.

23. (Currently Amended) An interworking function according to claim 21, ~~characterized in that the interworking function (IWF) comprises~~ further comprising means ~~(82)~~ for establishing a separate LAC protocol link for each PPP link ~~(PPP1, PPPn)~~ via one common broadband traffic channel and means ~~(84)~~ for multiplexing the PPP links into said broadband traffic channel.

24. (Currently Amended) An interworking function ~~(IWF)~~ according to claim 21, ~~characterized in that the interworking function (IWF) comprises~~ further comprising means ~~(94)~~ for establishing one common LAC protocol link for all PPP links ~~(PPP1, PPPn)~~ and means ~~(92)~~ for multiplexing the PPP subchannels inside the LAC protocol link.

25. (Currently Amended) A method of establishing a high-speed point-to-point data connection, the method comprising the steps of
establishing a first subleg between a mobile station and an interworking function in a mobile communication network,
establishing a second subleg between the interworking function and another party,
~~characterized in that the method also comprises the steps of~~
establishing a multilink point-to-point connection between the mobile station and the other party,

dividing the subleg between the mobile station and the interworking function into subchannels, and

transferring each link of the multilink point-to-point connection in a dedicated subchannel on the subleg between the mobile station and the interworking function.

26. (Currently Amended) A method according to claim 25, ~~characterized by~~ further comprising

establishing a physically separate traffic channel or traffic stream for each link of the multilink point-to-point connection on the subleg between the mobile station and the interworking function,

establishing a separate link access control (~~LAC~~) protocol link, ~~such as a radio link protocol (RLP) link~~, for each link of the multilink point-to-point connection on the subleg between the mobile station and the interworking function or on one of its subsegments.

27. (Currently Amended) A method according to claim 25, ~~characterized by~~ further comprising

establishing a separate link access control (~~LAC~~) protocol link, ~~such as a radio link protocol (RLP) link~~, for each of the multilink point-to-point connection on the subleg between the mobile station and the interworking function,

establishing one common broadband traffic channel for all links of the multilink point-to-point connection on the subleg between the mobile station and the interworking function.

28. (Currently Amended) A method according to claim 25, ~~characterized by~~ further comprising

establishing a separate dedicated link access control (~~LAC~~) protocol link, ~~such as a radio link protocol (RLP) link~~, for each of the multilink point-to-point connection on the subleg between the mobile station and the interworking function,

establishing one common separate link access control (~~LAC~~) protocol link, ~~such as a radio link protocol (RLP) link~~, for all links of the multilink point-to-point connection on the subleg between the mobile station and the interworking function,

multilexing multiplexing the links of the multilink point-to-point connection inside the ~~LAC~~ common link access control protocol link.

29. (Currently Amended) A method according to claim 25, ~~characterized in that~~
wherein said multilink point-to-point connection uses a multilink point-to-point protocol PPP,
and ~~that~~ wherein each link of the multilink point-to-point link uses a point-to-point protocol
PPP.
